

## THE STIKINE ICEFIELD

## DEVELOPMENT OF A BACKCOUNTRY RECREATION PUBLICATION

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## ABSTRACT

The Stikine Icefields is 2,900 square miles of snow covered glaciers, rugged mountains and world class scenery. Due to the inhospitality and remoteness of this country, it has historically been utilized little as a recreational area. This under utilization is changing with advancements in technology, growing emphasis on non-traditional outdoor recreation activities, and the increasing importance of tourism business in Southeast Alaska.

The icefields is a relatively unknown, undocumented piece of real estate. For the backcountry recreationist planning a trip to this unique part of the Tongass National Forest, there is practically no information existing to fill their needs. It would behoove the Forest Service to acknowledge this growth trend, provide the information needed, and hence develop a customer service relationship with this audience.

The object of this paper is to set up the process which will develop a publication which will satisfy the information needs of the climber, skier or hiker who wishes to plan a Stikine Icefields trip. The basis for the development of the publication is to apply marketing research concepts that directly involves the target audience in the process.

Keywords: glacier, skiing, climbing, Alaska

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## INTRODUCTION

In the past, independent groups of people have been using the Stikine Icefield for mountain climbing, hiking, and extended cross country skiing trips. These people have had little organized information or assistance from the U.S. Forest Service to aid in planning such a trip. The author has fielded several requests for information on this subject and found few sources available. I believe there is a demonstrated need to provide a service to this sector of the public.

Evidence suggests that there will be an increase in these recreation activities and that additional recreational activities will develop, thus creating even more demand for this type of publication. The tourism value and growth potential for a glaciated area such as the Stikine Icefield is evidenced by the recent growth in popularity of the Juneau Icefields. The Juneau Icefield have increased from about 200 RVD's five years ago to 25,000 RVD's in 1988!<sup>1</sup> Admittedly the majority of this increase comes from helicopter touring and not backcountry travelers, but it is an indication of potential. One way the use of the study area may grow will be when outfitter/guides begin finding the Juneau Icefields too crowded for their liking and they choose this area for the pristine experience it offers. Another boost may come through the public's enlightenment and acceptance of the helicopter as a commonality for transportation. This past winter the local helicopter company has had a sizable increase in flights for crosscountry skiers on day trips. The possibility also exists for local air charter services to invest in ski planes, which would cut the transportation cost to the public.

My emphasis in producing a publication for backcountry users is to employ marketing concepts and techniques. Through the understanding that good marketing is two-way communications, knowing your customer, understanding the customers perspective, and getting the right information to the right people, I plan to <sup>2</sup>write a publication which best meets the needs of the target audience. As noted by Dr. Sam Ham, the degree to which we have prior ego-involvement with the topic is highly relevant to the interest the reader has in a message. Thus, by directly involving the public in <sup>3</sup>this writing, the final product will be most likely to be satisfactory to them.

The steps taken to accomplish the end product can be summarized as follows:

1. Selecting a target audience using current information and trend projections for the future.

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<sup>1</sup>Vivian Hoffman, dialogue April 1989

<sup>2</sup>William Chiat, "Do You Wanna Buy A Duck? Marketing Interpretive Services"

<sup>3</sup>Sam Ham, Journal of Interpretation, Vol. 8, 1983, pp.15,16.



2. Finding the customers wants and needs by soliciting them for direct input.

3. Product production Research the subjects which were determined to be the customer needs. Take the accumulated information and put it into a readable and usable format.

In a capsule, the basis of this effort is to make sure the people who know and recreate in these types of activities and country get the opportunity to tell the Forest Service what they think should go into this type of writing.

## LITERATURE REVIEW

Several reports were important guidelines for this paper. William Chiat's "Marketing Interpretive Services" was instrumental as a marketing guideline. Also used for guidance were: John Syme's Recreation In The Forest Service: A Marketing Opportunity, and Muriel More's A Guideline To Effective Interpretation.

In the compilation of the content of the publication, the National Park Service's Mountaineering - Denali National Park and Preserve offered a good outline for this project. Articles from the American Alpine Journal, dating from the first Devils Thumb ascent in 1947 to the present, provided information on logistics, route finding, and history. For a general overview of the areas geology, the Alaska Geographic book Alaska Glaciers was very helpful. Last but not least, local mountain climber Dieter Klose proved to be an invaluable source with his extensive knowledge of the icefield.

Many other sources provided valuable information but to a lesser degree than those listed above. Reference the bibliography for a complete listing.

## METHODOLOGY

The marketing techniques which will be emphasized in this project can be summarized as follows:

1. Selecting target audience
2. Finding customer wants
3. Product production

### 1. Selecting target audience

The target audience selection is based on who has been using the icefields for this type of recreation, who has contacted the Forest Service inquiring about these recreational opportunities, and the fact that this audience has been neglected in the past from a customer service standpoint. It is anticipated to be a segment of the recreating public which will continue to

grow<sup>4</sup>, especially in light of today's low level use of the Stikine Icefield as compared to its potential.

Who is the target audience? They are the people looking for excitement, remote country, and challenging experiences. They are the folks Gail van der Bie listed as "The Get Away Actives"<sup>5</sup> or in Muriel More's psychographic category of those who are "self-sufficient with strong inner values and are more likely to ... visit wilderness areas"<sup>6</sup>. Many of them are members of the Mountaineers or the American Alpine Club.

## 2. Finding customer wants

Finding what the customer wants was determined using current information available and by soliciting the public for input.

Current knowledge of customer wants is based on District personnel's interaction with public requests for information about the icefields. Over the past several years, the author has talked with approximately a dozen parties who desired information with which they could plan a backcountry trip.

The main avenue for determining the customer wants has been to solicit their input for the project. The primary emphasis of the inquiries were centered around the question of what type of information did the public want in the publication and what specific information did they have to contribute to the writing. The contact with the target audience was made in several ways, which are listed below.

Contacting by letter or phone people known to have traveled to Southeast Alaska for a trip to the Stikine Icefield.

Writing, calling, or meeting with local mountain climbers/skiers with knowledge of this area.

Publishing short article in mountaineering club newsletter (circulation of 11,000 people).

Publishing classified advertisements in outdoor magazines, outdoor school newspaper, and local newspaper.

Contacting commercial outfitter/guides who operate in similar country.

Contacting commercial outdoor sports store operators.

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<sup>4</sup>Rich Scheyer, Lecture at Clemson U., Sept. 19, 1989

<sup>5</sup>Gail van der Bie, "Marketing Plan For Massanutten Mountain", p.16

<sup>6</sup>Muriel E. More, A Guide to Effective Interpretation, p.4

### 3. Product

The Stikine Icefield is a relatively unknown, undocumented piece of real estate. There have been few, if any, scientific, recreational, or commercial activities on the icefield. Due to this, there is practically no documentation or literature existing that relates specifically to the area. Hence this paper has often had to rely on first hand sources or draw conclusions based on similar situations from different geographical locations. The final product will be a combination of input from members of the using public and information gathered through more traditional research channels.

The sources previously listed in the Customer Wants section not only gave input as to their needs, but many also contributed valuable information specific to the study area.

Listed below are other contacts made for additional data:

- A. Commercial flight operators  
Helicopter and fixed wing
- B. Federal agencies  
U.S. Geological Survey  
National Park Service  
National Weather Service  
U.S. Forest Service sources
- C. State agency  
Department of Natural Resources
- D. City of Petersburg  
Parks and Recreation Director  
Library  
Chamber of Commerce
- E. Schools  
University of Alaska - Fairbanks  
Petersburg High School  
National Outdoor Leadership School

The remainder of the product section is devoted to the text of the planned publication. It should be kept in the context that more information is expected to be gathered as additional people respond to advertisements and newsletter requests. The final publication will be made up of the following text, 4 to 6 photographs, and a map with the referenced placenames.



## TRAVEL IN THE STIKINE ICEFIELD

### INTRODUCTION

"I greatly enjoyed my walk up this majestic ice-river, charmed by the pale blue, ineffably fine light in the crevasses, moulins, and wells, and the innumerable azure pools in basins of azure ice, and the network of surface streams, large and small, gliding, swirling with wonderful grace of motion in their frictionless channels, calling forth devout admiration at almost every step..." So said John Muir about his 1879 journey up one of the glaciers of the Stikine Icefield.

The Stikine Icefield is located in the Coast Range of southeast Alaska along the border with British Columbia. The Stikine Icefields cover approximately 2900 square miles and encompass the highest peaks in the Coast Range south of the Saint Elias Mountains. There are at least four named peaks in this part of the range in excess of ten thousand feet, quite spectacular when sealevel is only a few miles away from the peak! Furthermore, the icefields meander through a myriad of lesser peaks varying in height from five to nine thousand feet. Many of these mountains remain unclimbed due to their remote nature and the notoriously harsh weather that presides there. In addition, scores of glaciers, including several of the tidewater variety, comprise a large and dominant part of this sublime landscape.

This publication emphasizes the portion of the Icefields from the Baird Glacier south to the Stikine River. Half this area is located in the Stikine-Le Conte Wilderness, the remainder is as untrammelled and remote as any official wilderness can be. The area is especially known by mountain climbers for the Devils Thumb, a 9,077' horn. In addition to climbing, the region has exceptional potential for glacial ski touring and hiking. Counterbalancing the attraction of the beautiful scenery is the fact the area experiences inclement, wet weather roughly 60% of the time. When this wet, windy weather confines a mountaineering party to their tents for days on end, it can become very discouraging. This is not country for the unprepared nor inexperienced soul.

### HISTORY

Very little is known about the early native population's regard for the icefields, except that they revered Kate's Needle as God.<sup>8</sup> The first known exploration of the icefields began around 1879 when John Muir first visited this part of Alaska. During his journey up the Stikine River with a group of local indians, Muir took a side trip to what he called the Dirt Glacier. Today we know it as Flood Glacier. He saw roughly 15 miles of the main trunk, noting

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<sup>7</sup>Muir, John. Travels in Alaska. p. 102

<sup>8</sup>Fred Beckey, "American Alpine Journal", 1947, p.268.



that "the walls on either hand are about from two to three thousand feet high, sculptured like those of Yosemite Valley".<sup>9</sup> He spent roughly five days on the glacier, admiring its sublime beauty and studying its enigmatic nature, before departing for Wrangell.

The next major milestone came in 1937 when a party led by Fritz Weissner attempted to climb Kate's Needle via the Flood Glacier approach. This first try failed but the route was repeated in August, 1946 by Fred Beckey, Bob Craig and Clifford Schmidke. This party took several days to make the first ascent of Kate's Needle. A few days later they also completed the first ascent of Devils Thumb via the southeast face and the east ridge. They described the summit as "an airy perch"<sup>10</sup>, noting that they could see Mounts Fairweather and Crillon 228 miles to the northwest. The account of these first climbs makes for fascinating reading.

Since these early expeditions, there have been numerous ascents of Devils Thumb and Kate's Needle. For those who desire more technical information on the region, most of these ascents are documented in the pages of the American Alpine Journal.

## GEOLOGY

Geologically speaking, the Coast Range is relatively young, falling somewhere between 46 and 55 million years of age. In the Stikine area, most of the rock on the Alaskan side is quartz diorite while on the Canadian side it tends to be granite. The range was formed by a batholith intrusion, or a massive rising of magma toward the surface of the earth. Tectonic uplift, or the effect of the earth's geologic plates moving against each other, continued working to build the peaks. Finally, the glaciers acted to carve the surface rock, creating today's dramatic landscape.<sup>11</sup>

Glacial formation is a slow process. It begins when the seasonal snowfall exceeds the seasonal melt. If this process continues repeating itself, the snow ultimately accumulates to a point where its own weight converts the lower levels into ice. Eventually, the mass of the snowfield may surpass gravity's ability to hold it in place. At this juncture, the glacier starts slowly flowing downhill. In addition, the vast regions comprising the icefields begin to gradually create their own climatic conditions. The presence of such large concentrations of ice actually lowers the average temperature of the area. This in turn promotes more snowfall and less melting and the process begins to perpetuate itself.<sup>12</sup>

The forces acting on the surface of glaciers are very similar to those acting on a river. The ice tends to move faster in the middle of the channel

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<sup>9</sup>Muir, p.100

<sup>10</sup>Fred Beckey, "American Alpine Journal", 1947, p. 268.

<sup>11</sup>Paul Bowen, dialogue, March 1989

<sup>12</sup>The Mountaineers, Mountaineering The Freedom of the Hills, pp. 406-414.

and more slowly along the periphery. The center moving more rapidly than the edges helps explain why many crevasses generally develop along the glacier's sides. Here, the friction created by the valley walls has a restraining effect. However, crevasses may form in many other places. They can occur where sharp elevation drops engender icefalls or at the upper limits of the glacier where the ice and rock separate, causing a large gap called a bergshlund. Crevasses may also develop where contours on the land surface below the glacier force the ice upward. "The only general rule applicable to crevasse location is that they can occur anywhere and anyhow on a glacier."<sup>13</sup>

People frequently ask why a glacier is so blue. This phenomena is the result of the glacier's high internal pressure, which may exceed 750 pounds per square inch, forcing most of the air out of the ice. This leaves extremely pure water molecules, in frozen form, which then absorb all frequencies of visible light except the blue. This is the only color reflected back to your eyes, thus the rich azure hue.

Another fascinating effect resulting from the glacier's tremendous internal pressure is an action known as ice sizzle. This occurs when pressurized air bubbles trapped in the ice are released, producing a crackling sound similar to seltzer water or champagne.

Occasionally, very large boulders may be found resting in odd places or perched in precarious locations near glaciers. These boulders are known as glacial "erratics". They result when the glacier transports the boulders from their original locations, deposits them, and then retreats. Erratics may frequently be seen sitting on the glacier as well. Often, the rock will block some of the sun's melting action and in this case, the ice surrounding the boulder will melt more quickly than the ice under the boulder. This may leave the erratic balanced on an unlikely column of ice.

Currently, no conclusive scientific evidence exists confirming the age of the ice for the Stikine glaciers. Studies on other Alaskan glaciers have demonstrated that regardless of size, the age of the ice at the glacier's terminus is roughly the same age of an older human, or 70 to 80 years. This being the case, you can divide the length of the glacier by an average age of 75 to estimate how far it moves in a year. Furthermore, from this information we may deduce that smaller, shorter glaciers have a slower flow rate than larger, longer ones.

The extremely rapid renewal of the glacier also brings to light another important point. The snow currently falling on the glacier's upper reaches might be seen by today's newborn child in their later years. Unfortunately, this is not widely known, nor are its implications often considered. Many mountaineers continue to operate under the false assumption that if they throw their trash into a crevasse, it will not arrive at the terminus for centuries, if ever. Sadly, their ignorance may result in future generations witnessing today's garbage calving off the front of a glacier.

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<sup>13</sup>Ibid., pp. 382-384.



## APPROACHES/ACCESS

Transportation to this part of Southeast Alaska is limited to the Alaska Marine Ferry System or daily jet service from Seattle, Washington. There are no roads leading to Petersburg or Wrangell. Either one of these communities may serve as a staging area for an icefield trip. The choice of which town to leave from depends mostly on which access route you choose to employ. Both towns are full service communities with grocery and hardware stores as well as hospitals. The hospitals can provide medical and emergency care. However, very serious injuries are stabilized and the patient is flown to a more comprehensive medical facility.

To access the icefield there are basically three options. One may use a boat to get to a glacial terminus and then either hike or ski from there. You may use a float plane to reach a terminus as well as an alpine lake. Finally, you can charter a helicopter from Petersburg and fly to any of the icefield which is non-wilderness.

Generally, Wrangell is used if you intend to enter the icefields via the Stikine River drainage. Petersburg is the better choice if access is to be via the Thomas Bay drainages. The better known entry routes off of the Stikine River include Kakwan Point Ridge to Popof Glacier, the Shakes Glacier and finally, several points in British Columbia including Great and Flood Glaciers.

To enter via Kakwan Point Ridge and Popof Glacier, leave the Stikine River approximately 1/2 mile upstream from Kakwan Point. Ascend to the Kakwan ridge top through the steep, brush covered chute. From the ridge top follow Popof Glacier to Summit Glacier to Shakes Glacier and points beyond.

To enter via Shakes Glacier, fly or boat to the head of Shakes Lake. Be aware that the lake may remain frozen into late May. From the lake, scramble up the rock wall on the north side of the glacier, being cautious of glacial calving and loose rock moraines. From here, you may elect to follow the medial moraine, which reportedly offers easy glacial walking for the first three miles. It is possible to proceed up the glacier flowing in from the north (it originates on Castle Mountain) and cross over a saddle onto Le Conte Glacier.<sup>14</sup> One party reported Shakes Lake to Devils Thumb took them 4 days in August.

If you are considering accessing via one of the glaciers on the Canadian side, it will be necessary to check with the appropriate Canadian Customs authorities beforehand and obtain required information from them. A U.S. Customs Office is located in Wrangell.

The most common access routes from Petersburg include Baird Glacier, Scenery Lake, Patterson Glacier or a direct helicopter flight to the icefields.

To enter via Baird Glacier, fly or boat to Thomas Bay. If you intend to go by floatplane it will be necessary to time your arrival with the high tide. There is a one mile walk along a flat outwash plain with multiple braided stream channels. Reconnoiter the stream channels from overhead for the best route or come by the Petersburg Ranger District Office to see the latest aerial photos. The outwash plain has been known to flood periodically, perhaps once

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<sup>14</sup> Arthur Mannix, dialogue April 1989.

or twice every decade, which could be detrimental to a party camped there!<sup>15</sup> Baird Glacier is unproblematic, with the exception of the Devils Thumb-Mt. Burkett Icefall, and the overall route provides some of the easiest travel to the higher country. This icefall has been negotiated on skis in spring, however, the same party has found it impassable in August once the snow depth had decreased.<sup>16</sup>

To reach Scenery Lake you will need to fly in by floatplane. The lake usually thaws sometime around mid June. Several climbing parties have reported that this route is tough going at the head of the valley, while another climber didn't think anything of it.<sup>17</sup>

To begin at Patterson Glacier, fly or boat to Thomas Bay. From there, hike the old, alder covered logging road on the east side of the Patterson River then follow the dry river channels to the toe of the glacier. The lower Patterson Glacier has been described as "a thrash" and very slow going due to the extensive seracs and crevasses.<sup>18</sup> At least one group has been turned back by these barriers.

Concluding the list of choices for access is the all encompassing alternative of chartering a helicopter. The major advantages of using a helicopter are it saves time and energy. The time savings can especially be beneficial to people on restricted schedules. You can charter a round trip flight or fly one way and access the icefield using one of the aforementioned routes. Even when flying both ways, it is wise to have scoped out an alternative for exiting on foot in case a helicopter cannot get in for a pickup. The aircraft currently in use in Petersburg has the capacity to carry 4 people and day packs or to carry 3 people and expedition packs. Since a large portion of the Stikine Icefield is in a Congressionally designated wilderness area, it is important for you to plan your flight accordingly by referencing the wilderness boundaries on the map. The areas that are outside the wilderness and hence open to helicopter use are:

All of Baird Glacier and it's tributaries.

Area immediately south of Devils Thumb.

Most of the Patterson Glacier except uppermost region.

## GENERAL

### Glaciers

Travelers on the glaciers covered with snow should be roped. All members of the party must be familiar with the techniques of basic glacier travel and

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<sup>15</sup>Rod Judy, dialogue March 1989.

<sup>16</sup>Dieter Klose, dialogue April 1989

<sup>17</sup>Ibid.

<sup>18</sup>Mike Ritze, dialogue concerning Bill Flor, April 1989



crevasse rescue. The safe minimum party is three people. Paired and solo travel is discouraged due to the difficulty involved with self rescues and the lack of readily available outside help.

Ice falls are a common impediment to travel. They are generally easier to negotiate in late winter and spring when heavy snow accumulations soften their precipitous contours. Often the easiest routes tend to be along lateral moraines. Note the better known icefalls which are labeled on the map.

#### Avalanches

Avalanches are always a potential hazard and they may occur during any season. The abundance of heavy, wet snow in this region frequently creates large slab avalanches. The constant sound of snowslides may be heard on most spring days. Ideally, each member of the party should be acquainted with the basics of avalanche safety. Carrying proper rescue equipment, such as avalanche beacons, telescoping probe poles, and shovels might also be wise, especially if you plan on pursuing telemark skiing. In addition, the risk of major rock and icefall from cliffs and hanging glaciers is always present. Be aware of these dangers and act accordingly.

#### Weather

The weather in Southeast Alaska is certain to play a major role in any type of prolonged outdoor activity. Rapid, unexpected changes are the rule rather than the exception. The climate may vary from weeks of wind driven rain and snow to extended periods of sunshine and warm days. The odds are the weather will generally fall somewhere toward the middle of this spectrum, usually leaning toward the rainy side.

The severity and capriciousness of the Alaskan weather can be quite debilitating. Mental and physical preparation for the Stikine area's harsh range of climatic extremes is a necessity to avoid having a long anticipated and planned for expedition turn into a major disappointment. The severity of the weather extends to town life as well. People often get stranded for days in Wrangell and Petersburg when air travel is not possible, especially during the fall and winter. These kinds of delays can be frustrating to the traveler operating within a restricted time schedule.

The major components of this debilitating weather include wind, snow, rain and the potential for extended white-out conditions. Southeasterly winds generally bring the omnipresent wet weather which largely accounts for the estimated 200 <sup>19</sup> inches of precipitation that falls each year in this part of the Coastal Range. At higher elevations, this converts conservatively to over 100 feet of snow a year! Generally, May through August are the months with the least precipitation, though even then, a week without sunshine would hardly be unusual. Temperatures range from near freezing up to the mid seventies during the summer and from -10 F. to 40 F. during the winter.

Even though the icefields are only a short geographic distance from the towns of Petersburg and Wrangell, for all intents and purposes, you should

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<sup>19</sup>Dr. Larry Mayo, dialogue March 1989

consider your party completely isolated. In the event of an emergency, inclement weather may prevent help from arriving for several days. It is essential for parties to be self-contained and prepared to handle any crisis that may arise. This means constantly operating in a safety conscious manner, being aware of personal and group limitations and finally, being fully versed in all first aid procedures, carrying good quality equipment and plenty of extra food.

### Sanitation

Everything except human excrement must be carried off the mountain. Keep your litter dry in plastic and it will be much lighter to pack out. For human waste, follow these simple steps:

- 1) Dig a shallow hole in snow near your campsite.
- 2) Line the hole with a heavy duty plastic bag.
- 3) Stake the corners of the bag open (wands work well). When not in use simply close the top of the bag to prevent it from filling with snow.
- 4) Use the bag as a communal latrine. A little attention to prevent overfilling will make the disposal process easier.
- 5) When bag is full, tie it off and toss it into a deep crevasse.
- 6) ONLY crevasse human waste. All trash must be carried out or your children may witness a glacier snout covered with garbage!

### Radios

Having some type of dependable radio would be a wise idea. Hand held VHF models with 5 watt output are preferable to CB's. With a radio you may be able to contact either the Coast Guard, the marine operator, or a commercial fishing vessel. All of these people monitor channel 16. The marine operator will tie you in to a standard phone line and bill you through the normal processes (collect, 3rd number, credit card, or marine vessel numbers). A radio, however, is not a foolproof insurance policy. Oftentimes, mountains or canyon walls may block radio transmissions. On other occasions, as already mentioned, even if you can make contact, it might be impossible for a plane or helicopter to fly due to bad weather. In any event, carrying a radio with extra batteries will greatly increase your chances of receiving help in a timely manner or they can be used for contacting a charter service for a change on a pick up date. A signalling mirror and flares may also be useful.

It is important that all members be fluent at reading a map and compass. White out conditions can make map reading skills crucially important. Trail wands can also be helpful in these conditions.

### Animals

Wildlife may pose a hazard to the success of your expedition if you are not careful. More than one outing has been ruined by animals destroying a food cache. Proper precautions should be taken for bears, wolverine, goats and ravens. Even at higher elevations, continue to be cautious with your food. Caches can be buried under at least 2' of snow, hidden under rocks, or kept in animal proof canisters. Use a wand to mark the spot for reference. It is a



good idea to leave your name and the date so other climbers will know it is not an abandoned cache.

## CLIMBING

Information concerning specific technical routes on peaks within the Stikine Icefields is fairly limited. The best resource would be publications such as The American Alpine Journal or simply speaking to people who have been there, such as local Petersburg climber Dieter Klose. This segment will only provide broad planning information and some general equipment suggestions.

Many routes involve combinations of ice, firm snow and rock. Since these peaks consist mostly of loose granite, rockfall is extremely common. Helmets are a must. You should expect it on any route and it may get particularly bad later in the day as the sun thaws the upper reaches of the slopes. Your route selection and choices of times to climb should thoroughly reflect your awareness of this hazard.

Climbing racks tend to be fairly standard with the consensus being that little technical ice equipment is generally necessary. This is the case because much of the ice climbing normally takes place in gullies where rock protection on the narrow side walls is usually available. Most trips have carried a few ice screws and possibly a deadman for crevasse rescues. You may also want to consider doubling your chock selection since you will frequently have to leave pieces behind for rappel anchors.

Finally, when planning a technical ascent, taking the season into account is necessary and would certainly contribute to the likelihood of your success. What might have been easy to travel on, hard packed snow one month can quickly deteriorate into chest deep slop the next. Generally, you can count on fairly consistent conditions through the middle to the end of June, after which snow on upper <sup>20</sup> elevations can turn to mush. August is a good month for rock routes.

## SKIING

The icefield offer good crosscountry skiing for either single day touring or for those interested in extended excursions into the heart of the region.

The most popular practice for day skiers is to wait for good weather and then helicopter onto the Horn Mountain - Thunder Mountain ridgeline. The ground south of the ridgeline is part of the Stikine-LeConte Wilderness and therefore, motorized transportation is forbidden by law. This location has a variety of terrain suitable for touring and telemarking. The season for day touring begins in January, when the snow becomes deep enough to cover the rocks, and continues into June. Spring skiing conditions become consistent by late April. Even on these short outings the party should have the proper safety and survival equipment. The weather may make it impossible for a helicopter to return for a pickup. In an emergency situation it is feasible to get down to the beach where flying conditions are usually somewhat better than

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<sup>20</sup>Dieter Klose, dialogue April 1989

up high. To reach the beach, head south from the 2988' peak, which is 1.5 miles west of Thunder Mountain, cross the saddle between the headwaters of Moonshine creek and Jap creek, follow the ridge north and down to saltwater at the mouth of Moonshine creek. Helicopters may only land in designated wilderness areas during emergency situations.

For more extended ski trips, there are dozens of sites suitable for establishing a base camp. In addition, a trip might be planned as a circuitous trek. Any traverse route should be thoroughly investigated to insure that the passage is not blocked by an impassable icefall. Since snow conditions at the icefalls change seasonally, it is best to check them by air before being dropped off. (One popular excursion involves flying up the Baird Glacier, establishing a base camp between Devils Thumb and Mount Burkett on the Right Fork of the Baird and then exiting by a 2 or 3 day ski down the Baird to Thomas Bay.) The best season for extended ski touring is between April and late June. At this time snow depths are at their greatest, daylight hours are long and the weather has significantly improved following the winter storms. On longer ski trips, many people find it preferable to use waxless skis because the variable spring snow may otherwise require a broad array of waxes, not to mention the headache of stripping klisters when snow conditions change.

Climbing skins are convenient if you want to ascend steep side slopes for telemark skiing. Sturdy three-pin ski boots are recommended because they are suitable for hiking on rugged terrain and can adapt to use with crampons. Many people find shorter than normal touring poles are best and bring along an adjustable pair of avalanche probe poles.

Other equipment recommendations include having very good raingear. The best choice would be material of rugged construction and completely impermeable. The next best would be the top of the line "breathable" type. The recommended tent is a completely waterproof, four-season, domed model. Remember, you may have to spend several days in your tent waiting out a storm. A shovel is good for digging snowcaves, as well as for avalanche rescues. Synthetic clothing works well in wet conditions, with wool being an acceptable second choice. The best sleeping bags are of synthetic fill. Air charter services prefer internal frame packs for flying. For the sun, which can get intense on the snow and ice, bring sunglasses of top quality with side visors. Sunscreen and sunblock are also necessary. Due to the remoteness of this country, it is especially important to have good first aid and repair kits. Consider the chance of being stranded for several days when deciding on food quantities. Finally, bring an ample supply of plastic garbage bags for keeping things dry.

This is not intended to be a complete listing of the necessary equipment, but only a reference to highlight those needs particular to this area. Consult a good mountaineering guide (such as Mountaineering The Freedom of the Hills by The Mountaineers) for a complete listing of equipment to take on a glacier excursion.



## SOURCES

For more information, contact one of the following:

Petersburg Chamber of Commerce  
P.O. Box 649  
Petersburg, Alaska 99833  
907-772-3646

Wrangell Chamber of Commerce  
P.O. Box 49  
Wrangell, Alaska 99929  
907-874-3901

Petersburg Ranger District  
P.O. Box 1328  
Petersburg, Alaska 99833  
907-772-3871

Wrangell Ranger District  
P.O. Box 51  
Wrangell, Alaska 99929  
907-874-2323

### Maps:

1:63360 quadrangles, Petersburg C-1 for area around Shakes Slough and Popof Glacier, Psg. D-3 for lower Patterson Glacier, Psg. D-2 for lower LeConte Glacier, D-1 for Castle Mountain, Sumdum A-3 for lower Baird Gl., Sumdum A-2 for upper Baird and Devils Thumb, Sumdum A-1 for Kates Needle and Devils Thumb.

1:250,000 maps, Petersburg, Alaska map and the Sumdum, Alaska map.

Maps can be ordered from:

U.S.G.S.  
Alaska District Section  
Box 12  
Federal Bldg.  
101 12th Ave.  
Fairbanks, Alaska 99701

## CONCLUSION

There are three choices of where to go with the information gathered in this paper. These alternatives are:

- 1) Do nothing beyond this point.
- 2) Furnish the public with this paper as is.
- 3) Complete the project and publish a map/brochure.

The first alternative provides zero service to the public. We would be missing a chance to gain esteem in the eyes of the target audience. It would also be missing an opportunity to get in at an early stage and guide future use of the icefield. Examples include education on sanitation practices and helicopter use in the wilderness.

The second choice would duplicate the paper as it is and use it as a handout. This would be economical with the costs being materials and labor to photocopy copies off. This may suffice in getting the message out but would not be as polished or professional as is possible. Nor would it be as marketable of a product. There would not be a map as a reference delineating the wilderness boundaries and high safety hazard areas, nor any pictures which as they say can be worth a thousand words.

The preferred choice would be to go ahead and publish a small map/pamphlet. This would turn around the aforementioned negatives into positives. The cost would be negligible at about \$3,000 for 2,500 copies and I believe the benefits can far outweigh the costs. Not only would we be filling a public need, but there would also be several spinoff benefits. One is this will bring the target audience into contact with the Forest Service enabling us to have better use records, which at this time are practically nonexistent since traditionally this user group has not had a reason to come into contact with the U.S.F.S. Several members of the climbing community have expressed their gratification that they were being involved in this publication process. By printing a quality publication, they will see their efforts rewarded and understand the Forest Service supports them in their recreational endeavors. In this way, we would be meeting one of the major emphases of the National Recreation Strategy.

There are also benefits which are not related directly to the target audience. The information gathered through the process of researching this paper will reach a much larger audience when it is used at public information service sites around the Stikine Area. These sites include bulletin board displays, the district's reception areas, and through ferry interpreters.

## BIBLIOGRAPHY

- 1) The Alaska Geographic Society, Alaska Glaciers, Alaska Geographic, Vol. 9, No. 1, 1982.
- 2) Bammel, Gene, Burros-Bammel, L. L., and Kopitsky, Kathy, "First Impressions: National Forest Brochures" , Women In Natural Resources, Vol. 10, No. 1.
- 3) Beckey, Fred, "West of the Stikine", American Alpine Journal, 1947.
- 4) Bowen, Paul. "Le Conte Glacier Study", Petersburg High School, 1988.
- 5) Chiat, William, "Marketing Interpretive Services".
- 6) Culbert, Richard A., "Devils Thumb and Kate's Needle, Stikine Icecap.", American Alpine Journal, 1971.
- 7) Ham, Sam H., "Cognitive Psychology and Interpretation: Synthesis and Application", Journal of Interpretation, 1983.
- 8) More, Muriel E., A Guide To Effective Interpretation - What The Forest Service Can Learn From Marketing Research, USDA Forest Service, 1983.
- 9) The Mountaineers, Mountaineering The Freedom of the Hills, 3rd Edition, 1974
- 10) Muir, John, Travels In Alaska, Houghton Mifflin Co., 1918.
- 11) National Park Service, Mountaineering - Denali National Park and Preserve, National Park Service, 1987.
- 12) U.S. Forest Service, Environment Assessment for the Management Guidelines for Helicopter Landing Tours on the Juneau Icefield, March, 1987.
- 13) U. S. Forest Service, Avalanche Handbook, Agriculture Handbook 489, Nov. 1978.
- 14) van der Bie, Gail, "Marketing Plan for Massanutten Mountain", USDA-Forest Service, March 11, 1988

## APPENDIX A

### INFORMAL INTERVIEW LIST

- 1) Bob Seibert - National Park Service - Denali National Park
- 2) Dieter Klose - Mountaineer
- 3) Ed Boulton - American Alpine Club and Mountaineers Club
- 4) Mike Ritze - Mountaineer
- 5) Dr. Larry Mayo - USGS - Univ. of Alaska, Fairbanks
- 6) Paul Bowen - Petersburg Schools Geologist
- 7) Leif Lee - National Weather Service
- 8) Scott Fisher - Mountain Sports Shop Owner
- 9) Bonnie Lippitt - USFS
- 10) Marti Marshall - USFS
- 11) Chris Weis - Librarian
- 12) Rod Judy - Pacific Wing Air Charter Service
- 13) Jack McKernan - Temco Helicopter
- 14) Mary Clemens - Wrangell Ranger District
- 15) Bill Guy - Mountaineer
- 16) Drew Grant - Alaska Department of Natural Resources
- 17) Ken Leghorn - Alaska Discovery
- 18) Robert Merrick - Mountaineer
- 19) Arthur and Karen Mannix - Mountaineers
- 20) Neil Hagadorn - USFS
- 21) Sandy Skrien - USFS
- 22) Vivian Hoffman - USFS
- 23) Alaska Island Air
- 24) Marge Mansfield & co. - Mountaineers



## APPENDIX B

### EQUIPMENT LIST

Recommended list of equipment for a Stikine Icefields trip. Some of the items may not be necessary, depending on criteria specific to your trip and your personal preferences.

#### Clothing

File Balaclava  
Sunglasses (100% U.V.)  
Ski Goggles  
Full polypro. suit (Sock, pants, shirt, gloves)  
Pile Jacket  
Wool or Pile Shirts  
Rain Jacket (Waterproof!)  
Parka  
Pile Mittens  
Wool Gloves  
Gore Tex Overmits  
Pile or Wool Pants  
Rain Pants (Waterproof)  
Gaiters  
Plastic Boots or heavy leather boots  
Vapor Barriers  
Wool Socks  
Baseball Cap for Sun Protection  
Layered Camp Booties  
Light Cotton Shirt and Shorts for Sun  
Bandana/Kerchief

#### Equipment

Strong Pack  
Day Pack  
Radio w/ extra batteries  
Plastic Sled  
Tent  
Tarp or Ground Cloth  
Tent Repair Kit  
Stuff Sacks  
Water Bottles  
Trail Wands  
Candles  
Small Roll of Duct Tape  
Toilet Paper  
Signal mirror  
Rocket & Smoke Flares

#### Equipment

Synthetic Winter Sleeping Bag  
Two closed cell sleeping pads  
Plastic Bags  
Flashlight with extra bulbs  
and batteries  
Head Lamp  
Swiss Army Knife  
Compass  
Topographic Maps  
Complete First Aid Kit  
Two Stoves  
Stove Repair Kit  
Extra Fuel (Enough for melting  
snow)  
Pot Set  
Bowl, Spoon, Mug  
Cooking Utensils  
Sunscreen, zinc oxide  
Extra Parachute Cord  
Butane lighter  
Crampons (Including spare for  
the party)  
Ice Axe  
Harness  
Locking Carabiners  
Figure Eight Descender  
Climbing Rope(s)  
Pulley  
Skis (waxless?)  
Poles (probe poles)  
Binding/Ski/Pole Repair Kit  
Shovel  
Avalanche Beacons  
Snow Shoes  
Crevasse Rescue Equipment  
(Jumars or Gibbs, Prusiks,  
Deadman)

## APPENDIX C

### CHARTER LIST

#### PETERSBURG

##### Air Charters-

- 1) Alaska Island Air Inc.  
P.O. Box 508  
Petersburg, AK 99833  
907-772-4222 or 3120
- 2) Pacific Wing  
P.O. Box 1560  
Petersburg, AK 99833  
907-772-9258
- 3) Nordic Air Inc.  
P.O. Box 1292  
Petersburg, AK 99833  
907-772-3535
- 4) Temsco Helicopters  
Petersburg, AK  
907-772-4780
- 5) Kupreanof Flying Service  
P.O. Box 768  
Petersburg, AK 99833  
907-772-3396

#### WRANGELL

##### Air Charters-

- 1) Diamond Aviation  
Wrangell Airport  
Wrangell, AK 99929  
907-874-2319
- 2) Wrangell Air Service  
Airport Road  
Wrangell, AK 99929  
907-874-2369

##### Boat Charters-

- 1) Buness Diving  
Box 66  
Wrangell, AK 99929  
907-874-3122
- 2) Emde Charter Service  
Box 867  
Wrangell, AK 99929  
907-874-3501
- 3) Kuriti Marine  
Box 495  
Wrangell, AK 99929  
907-874-3849
- 4) Aqua Sports Ent.  
Box 861  
Wrangell, AK 99929  
907-874-3061 or 3811
- 5) Ellis Marine  
Box 277  
Wrangell, AK 99929
- 6) T&H Charters  
Box 1062  
Wrangell, AK 99929  
907-874-2085